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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,559	01/23/2004	Katsunori Takada	K06-165935M/TBS	3219

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EXAMINER

YEE, DEBORAH

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 12/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/762,559

Applicant(s)

TAKADA ET AL.

Examiner

Deborah Yee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
- Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 to 8 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Iguchi et al (US Patent 6,270,596) .

3. The reference discloses specific steel alloy 7 in Table 1 of columns 5 and 6 having a composition which meets the recited claims, and when calculated, satisfy the claimed equations. Even though example is a comparative example, it is still considered prior art because it has been published and therefore known in the art. Also even though prior art does not teach the claimed equations, such would not be a patentable difference because it has been held that there is no invention involved in the discovery of a general formula if it covers a composition described in the prior art.

4. Iguchi teaches a steel for use as a high strength shaft which would broadly include pinion shaft recited by the claims. Also similar properties of high strength and high torsional strength resistance are taught.

5. Even though prior art does not teach 3-phase ferrite+pearlite+bainite microstructure or hardness of 24 to 30HRC as recited by claims 5 to 8, such would not be a patentable difference since they are future properties that occur only when hot rolling takes place. Claims 5 to 8 would patentably distinguish over prior art if applicant

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amends claim 5 by actively reciting properties and hot rolling limitation with language such as follows:

---wherein the steel having been hot rolled to obtain a microstructure comprising 3-phase texture of ...--- .

6. Iguchi in Table 2 of columns 7 and 8 discloses steel 7 having a surface hardness of 650HV or more and hence meet claim 15.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 9 to 14 and 16 to 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iguchi et al (US Patent 6,270,596).

9. As stated in paragraph 3, US Patent '596 steel 7 meets the claimed composition and equation recited by applicant's independent and dependent claims. Moreover, US Patent '596 in claim 1 of column 8 discloses subjecting steel to rolling or forging at Ac3 to 1050C and therefore would overlap with applicant's range of 850C or lower as recited by claim 9 and 700 to 850C as recited by claim 17. Also prior art on lines 4-5 in column 5 teaches a reduction in area of more than 30% is desired and hence would meet the process step of 10% or more reduction recited by claim 9.

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10. Even though prior art does not recite ferrite ratio of 40% or less, hardness of 24 to 30HRC when hot rolled, torsional strength of 1670 to 1800MPA or wear loss of 0.002 to 0.004 g as recited by claims 13, 14, 18 and 19 respectively, such properties would be expected since composition and equation are met, and process limitations are closely met, and in absence of proof to the contrary.

11. In regard to claim 16, note Uguchi in Table 2 of columns 7-8 teaches examples with austenite grain size of 8 or more. Also Tables 2 and 3 disclose high torsional failure resistance; and hence would suggest a high torsional strength as recited by claim 18.

Response to Arguments

12. Applicant's arguments filed 9-30-05 have been fully considered but they are not persuasive. It was argued that 102 rejection is invalid because prior art fails to teach the recognized results of the present invention, wherein Ceq is limited to 0.8 to 0.95 to achieve a hardness of 24 to 30HRC and f value is limited to <1.0 to achieve 40% ferrite or less. It is the examiner's position that prior art discloses a steel alloy which meets applicant's composition and equations ; and hence would have sufficient specificity to constitute an anticipation under the 102 statute (MPEP 2131.03) . Moreover, applicant's argument that the alleged anticipatory prior art teaches away from the invention or is not recognized as solving the problem by the claimed invention are not germane to a rejection under section 102, see MPEP 2131.05.

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3. It was submitted that Iguchi teaches a drive shaft whereas the present invention is directed to a pinion shaft. It is the examiner's position that prior art claim 1 recites "A process for producing a high strength shaft..." which would broadly include pinion shaft.

4. It was submitted that Iguchi method teaches an area reduction higher than 30% whereas the present invention recites higher than 10%. It is the examiner's position that prior art reduction rate of higher than 30% is within applicant's claimed reduction of higher than 10%; hence claims would not patentably distinguish over prior art.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on Monday-Friday from 6:00 to 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Deborah Yee
Primary Examiner
Art Unit 1742

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